

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY


(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 01 APR 2005

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Applicant's or agent's file reference P13477/01b	<b>FOR FURTHER ACTION</b>		See Form PCT/PEA/416
International application No. PCT/EP2004/002370	International filing date (day/month/year) 09.03.2004	Priority date (day/month/year) 25.03.2003	
International Patent Classification (IPC) or national classification and IPC G06F1/16, H04M1/02, G06F3/02			
Applicant SONY ERICSSON MOBILE COMMUNICATIONS AB			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau) a total of 2 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>			
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>			
Date of submission of the demand  04.12.2004		Date of completion of this report  04.04.2005	
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016		Authorized Officer  Schröter, P  Telephone No. +31 70 340-2909	



**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/EP2004/002370

**Box No. 1 Basis of the report**

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
  - ☐ publication of the international application (under Rule 12.4)
  - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements\*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

**Description, Pages**

1-8 as originally filed

**Claims, Numbers**

1-10 received on 03.02.2005 with letter of 01.02.2005

**Drawings, Sheets**

1/3-3/3 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☒ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☒ the claims, Nos. 11-15
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/EP2004/002370

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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	1-10
	No: Claims	
Inventive step (IS)	Yes: Claims	1-10
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-10
	No: Claims	

2. Citations and explanations (Rule 70.7):

**see separate sheet**

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

1. Reference is made to the following document:  
D2 : WO 00/54479 A (RENFER ROBERT O) 14 September 2000 (2000-09-14)

2. **INDEPENDENT CLAIM 1**

The document D2 is regarded as being the closest prior art to the subject-matter of claim 1, and discloses (the references in parentheses applying to this document): Terminal, comprising a terminal body ('portable communications device', abstract, fig. 1a), a data output interface including a display disposed on a face of said terminal body ('optical display', abstract, fig. 1a), and a data input interface including a keypad which is extractable ('roll-out keyboard', abstract, fig. 1a) from a storage space inside said terminal body ('integrated into the mobile telephone', abstract), wherein said keypad is disposed on a flexible film ('keyboard extension which is flexible', abstract) supported by a pulley comprising retractor means, biased to retract said film into said storage space ('drawn into the mobile telephone by means of a spring mechanism').

The subject-matter of claim 1 differs from this known terminal in that said terminal body comprises activator means for applying an electrical current through said film, wherein said film comprises a material which is devised to change from a flexible mode to a stiff mode upon said current application.

The subject-matter of claim 1 is therefore new (Article 33(2) PCT).

The problem to be solved by the present invention may be regarded as how to allow a keypad disposed on a flexible film to be used when no flat support surface is available.

The solution to this problem proposed in claim 1 of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons: the technical problem is solved by the claimed invention by applying a current to the flexible film which changes to a stiff mode upon such current application. This solution is not disclosed or

rendered obvious by any of the documents cited in the search report.

Claims 2-7 and 10 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

### **3. INDEPENDENT CLAIM 8**

The document D2 is regarded as being the closest prior art to the subject-matter of claim 8, and discloses the preamble of claim 8, which is the same as the preamble of claim 1 (see section 2 above).

The subject-matter of claim 8 differs from this known terminal in that said film has a curved cross-section when extracted from said storage space to maintain a straight shape.

The subject-matter of claim 8 is therefore new (Article 33(2) PCT).

The problem to be solved by the present invention may be regarded as how to allow a keypad disposed on a flexible film to be used when no flat support surface is available.

The solution to this problem proposed in claim 8 of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons: the technical problem is solved by the claimed invention by forcing the film to stiffen by having a curved cross-section when extracted. This solution is not disclosed or rendered obvious by any of the documents cited in the search report.

Claim 9 is dependent on claim 8 and as such also meets the requirements of the PCT with respect to novelty and inventive step.

CLAIMS

1. Terminal (1), comprising a terminal body (2), a data output interface including a display (6) disposed on a face of said terminal body, and a data input interface  
5 including a keypad (4), which is extractable from a storage space (8) inside said terminal body, wherein said keypad is disposed on a flexible film (12), supported by a pulley (14) comprising retractor means, biased to retract said film into said storage space, **characterised in** that said terminal body comprises activator means (15) for applying an electrical current through said film, wherein said film comprises a  
10 material which is devised to change from a flexible mode to a stiff mode upon said current application.
2. The terminal as recited in claim 1, **characterised in** that said terminal body has a front face supporting said display, and a back face opposite said front face,  
15 wherein said keypad is extractable from an aperture (7) disposed at a side of said terminal between said front face and said back face.
3. The terminal as recited in claim 1, **characterised in** that said keypad comprises a gripping portion (13) at an outer end of said film, wherein the keypad is  
20 extractable from said storage space by a linear movement.
4. The terminal as recited in claim 1, **characterised in** that said pulley is devised to retract and roll up said film, when in a flexible mode, about a roller.
- 25 5. The terminal as recited in claim 1, **characterised in** that detector means (16) are devised to detect when said film has been extracted from said storage space to a fully extracted position, whereupon said detector means trigger said activator means to apply an electrical through said film.
- 30 6. The terminal as recited in claim 1, **characterised in** that said pulley comprise means for locking said retractor means when said film has been extracted from said storage space to a fully extracted position.
7. The terminal as recited in claim 5, **characterised in** that said detector means are  
35 devised to detect when a pulling force is applied on said film when the film is located in said fully extracted position, whereupon said detector means controls said

activator means to stop applying a current to said film.

8. Terminal (1), comprising a terminal body (2), a data output interface including a display (6) disposed on a face of said terminal body, and a data input interface
- 5 including a keypad (4), which is extractable from a storage space (8) inside said terminal body, wherein said keypad is disposed on a flexible film (12), supported by a pulley (14) comprising retractor means, biased to retract said film into said storage space, **characterised in** that the flexible film is curved to a shallow U-shape in a cross-section transverse the longitudinal extension of the film, when extracted from
- 10 said storage space, wherein the film will automatically maintain a straight shape outside the terminal.
9. The terminal as recited in claim 8, **characterised in** that the flexible film is extractable through a slot (7), which is curved to said shallow U-shape.
- 15
10. The terminal as recited in claim 1 or 8, **characterised in** that said terminal is a radio communication terminal.